

Output tables for 1xN statistical comparisons.

December 17, 2022

1 Average rankings of Quade test

Average ranks obtained by each method in the Quade test.

Algorithm	Ranking
MEABC	6.6011
ABCADE	3.6931
ABCNG	5.3299
SHADE	2.4908
MAPSO	2.9494
TAPSO	5.1414
MEEABC	1.7943

Table 1: Average Rankings of the algorithms (Quade)

Quade statistic (distributed according to F-distribution with 6 and 168 degrees of freedom): 27.464103.
P-value computed by Quade Test: 0.

2 Post hoc comparison (Quade)

P-values obtained in by applying post hoc methods over the results of Quade procedure.

i	algorithm	$z = (R_0 - R_i)/SE$	p	Holm	Hochberg	Hommel	Holland	Rom
6	ME/ABC	4.272332	0.000019			0.008333	0.008512	0.008764
5	ABCNG	3.142442	0.001675			0.01	0.010206	0.010515
4	TAPSO	2.9749	0.002931			0.0125	0.012741	0.013109
3	ABCADE	1.687684	0.091472			0.016667	0.016952	0.016667
2	MAPSO	1.026708	0.304558			0.025	0.025321	0.025
1	SHADE	0.61909	0.535857			0.05	0.05	0.05

Table 2: Post Hoc comparison Table for $\alpha = 0.05$ (Quade)

Bonferroni-Dunn's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.008333 .
Holm's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.016667 .
Hochberg's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.0125 .
Hommel's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.016667 .
Holland's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.016952 .
Rom's procedure rejects those hypotheses that have an unadjusted p-value ≤ 0.013109 .

3 Adjusted P-Values (Quade)

Adjusted P-values obtained through the application of the post hoc methods (Quade).

i	algorithm	unadjusted p	p_{Bonf}	p_{Holm}	$p_{Hochberg}$	p_{Hommel}
1	MEABC	0.00019	0.000116	0.000116	0.000116	0.000116
2	ABCNG	0.001675	0.010053	0.008377	0.008377	0.007327
3	TAPSO	0.002931	0.017585	0.011723	0.011723	0.011723
4	ABCADE	0.091472	0.548832	0.274416	0.274416	0.274416
5	MAPSO	0.304558	1.827347	0.609116	0.535857	0.535857
6	SHADE	0.535857	3.215143	0.609116	0.535857	0.535857

Table 3: Adjusted p -values (QUADE) (I)

i	algorithm	unadjusted p	$p_{Holland}$	p_{Rom}
1	MEABC	0.000019	0.000116	0.00011
2	ABCNG	0.001675	0.008349	0.007967
3	TAPSO	0.002931	0.011672	0.011178
4	ABCADE	0.091472	0.25008	0.274416
5	MAPSO	0.304558	0.51636	0.535857
6	SHADE	0.535857	0.535857	0.535857

Table 4: Adjusted p -values (QUADE) (II)